UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460
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OCT 21 1996

OFFICE OF
SOLID WASTE AND EMERGENCY
RESPONSE

MEMORANDUM

SUBJECT: Interim Guidance on Integrity Assessment of Bare Steel USTs

FROM: Joshua Baylson, Acting Director
Office of Underground Storage Tanks

TO: State UST Program Managers
EPA UST/LUST Regional Program Managers

The purpose of this memorandum is to provide guidance regarding integrity assessment requirements for bare steel underground storage tanks (USTs) ten years old or older under 40 CFR 280.21(b)(2)(iv). This subject is of great interest and importance as we near two dates -- December 22, 1998, by when all regulated UST systems must be protected from corrosion, and November 15 of this year, when a key industry standard, ASTM ES 40 - 94, expires. A proposed replacement to ES 40-94 is currently undergoing revision through the ASTM process; however, based on meetings the week of October 14, ES 40-94 will expire before a replacement can be finalized.

OUST recommends that implementing agencies continue to follow their current policies regarding allowed integrity assessment methods until more information is available and OUST issues further guidance.

In the past, through guidance dated May 18, 1995, and September 14, 1995, OUST recommended that states find that the combination of the techniques listed in ASTM Emergency Standard ES 40-94 and monthly leak detection monitoring are no less protective of human health and the environment than those techniques listed at 40 CFR 280.21, for the two-year life of the emergency standard. We are not able to provide further guidance now because the ultimate fate of ES 40's proposed replacement is unknown, and because we would like to include some additional information. This information will include, for both internal (human entry) inspection and the alternative technologies, limited field observations from an EPA engineering study and summaries of performance data from vendors. It also will include the results

of a search of recent literature and interviews with experts regarding the likelihood of USTs testing tight but still leaking after the application of cathodic protection.

In our May 1995, guidance we noted that monthly leak detection monitoring following upgrading according to ES 40-94 would provide helpful performance data. We are very interested in any such data you may have regarding the leak-free performance of tanks upgraded after assessment by either internal inspection or alternative methods.

We acknowledge that integrity assessment of older tanks is a controversial issue and understand that many of you are under pressure to craft your policies in certain ways. OUST recently has become aware that a small number of states have allowed another approach to meet the "as protective" standard for these older tanks. This approach is similar to one of the options listed in the regulations at 40 CFR 280.21 for upgrading USTs which are less than ten years old. The approach involves performing a tank tightness test prior to adding an impressed current cathodic protection system. Another tightness test is then required three to six months following the addition of cathodic protection to ensure the tank has not begun leaking since the corrosion protection upgrade. An additional requirement is that monthly leak detection monitoring be employed on the upgraded system. While this may at first seem to be a simple, low cost technique to evaluate the suitability of an older tank for upgrading, OUST has technical concerns with this approach. **At this time we recommend against changing to a policy relying only on leak detection for assessing older bare steel tanks for integrity.**

The first concern relates to why the ten year old breakpoint was incorporated into the regulations in the first place. The preamble to the regulations (see 53 Fed. Reg. 37132) states:

> For tanks 10 of age and older, these two methods above (either a pair of tank tightness tests or monthly release detection monitoring) are inadequate to ensure structural soundness before the cathodic protection system is installed. ... As described above, unprotected tanks often corrode through but do not leak because the corrosion product, backfill, and interior sludge seal the hole.... EPA has concluded ... that as many as 7 percent of existing USTs are corroded through, but not leaking. Many more existing tanks may be heavily corroded and not suitable for cathodic protection alone as an upgrading measure.

In writing the regulations, EPA believed that newer tanks were much less likely to have corrosion holes than older tanks. Therefore, EPA allows this option only for tanks under ten years of age. At this time, we do not have any studies or technical documentation which contradict the preamble or regulations in this regard.

Second, we have heard of tanks having holes with tightly adhering rust (so-called “rust plugs”) beginning to leak after the addition of cathodic protection. Once impressed current is added to a tank with rust-plugged holes, the current which protects the tank also can loosen the rust plugs, causing the once-plugged hole to begin leaking.

Third, a tank which has a very small leak or which has a hole that is not yet leaking because it is blocked by something (such as clay, sludge, or other material) external to the tank, will pass a tightness test but begin to leak or leak at a higher rate over time. A tank such as this should either be closed or repaired prior to being upgraded.

At this time we recommend that implementing agencies exercise caution in any contemplated reformulation of policies, and that they continue to follow their previous policies until we issue further guidance regarding integrity assessments. It is imperative that we assure that only those tanks suitable for upgrading are upgraded, so as to prevent another generation of leaking tanks. We continue to believe that ensuring the integrity of USTs ten years old or older prior to upgrade is vital. Again, we note that no studies or other technical information have been provided to contradict the language in the preamble or the technical regulations. If you have any information to share or questions to ask, please contact David Wiley at (703)603-7178.

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